

Claims

1. An electrophotographic apparatus comprising a plurality of image forming means each including a photoconductive drum having a photoconductive layer, an exposure means for forming an electrostatic latent image on the photoconductive layer of the photoconductive drum, and a developing means for causing toner to stick to the latent image on the photoconductive drum so as to form a toner image, an endless intermediate transfer belt rotated around and stretched between a drive roller and a driven roller, a second transfer means located above a row of the photoconductive drums, for transferring a toner image from the intermediate transfer belt onto a recording medium, toner images formed on the plurality of photoconductive drums being transferred onto the recording medium through the intermediary of the intermediate transfer belt so as to form a color image thereon, a recording medium supply path composed of a vertical conveying path for conveying a recording medium fed from a sheet cassette in which recording mediums are accommodated, upward outside of the developing means, a curved conveying path, a horizontal conveying path for conveying the recording medium, in a substantially horizontal direction, to the second transfer means, a fusing means located on the horizontal conveying path, downstream of the transfer means, for fusing the transferred toner image on the

recording medium, a discharge tray for stacking therein recording mediums for which printing is completed, and which are discharged, a bypass conveying path for conveying a recording medium to be subjected to double face printing, for which printing has been made on one side surface thereof, a first branch means for guiding the recording medium to be subjected to double face printing the conveying path for the discharge tray, onto the bypass conveying path, a reversing conveying path for reversing the recording medium conveyed on the bypass conveying path during double face printing, a second branching means for guiding the recording medium reversed in the reversing conveying path from the bypass conveying path onto the horizontal conveying path during double face printing, and a return conveying path for conveying the recording medium which has passed through the second branch means onto the horizontal conveying path.

2. An electrophotographic apparatus as set forth in claim 1, wherein only the vertical conveying path and the reversing conveying path are laid in substantially parallel with each other in an opening door at the front surface of the electrophotographic apparatus.

3. An electrophotographic apparatus as set forth in claim 1 or 2, wherein conveying rollers for driving a recording medium which is inserted into the reversing conveying path and is then fed out, are provided on the

body side of the electrophotographic apparatus so as to define the reversing conveying path as a mere hollow space.

4. An electrophotographic apparatus as set forth in claim 2 or 3, wherein the opening door has a mechanism for opening the door along the vertical conveying path.

5. An electrophotographic apparatus as set forth in claim 1 or 4, wherein a casing upper part which is opened along the curved conveying path and the horizontal conveying path is provided.

6. An electrophotographic apparatus as set forth in claim 5, wherein a mechanism for opening the casing upper part along the bypass conveying path is provided.

7. An electrophotographic apparatus as set forth in claim 1 or 6, wherein a manual sheet feed tray is provided on a substantial extension of the return conveying path.

8. An electrophotographic apparatus as set forth in claim 1 or 7, wherein the following relationships are satisfied:

$$L1 > (2 \times P_{max} + Gap)$$

$$L2 > P_{max}$$

where L1 is a length from the looping route which comes out from and returns to the second branch means on the bypass path, by way of the second transfer means on the horizontal path, the fusing means, the first branch means and the bypass path, L2 is a length of the

reversing conveying path which extends from the second branch means to a position in the vicinity of the sheet cassette, Pmax is a maximum length of a recording medium, and Gap is intervals of recording mediums to be conveyed.

9. An electrophotographic apparatus as set forth in claim 8, wherein the return conveying path from the second branch means is formed in an S-like shape.

10. An electrophotographic apparatus as set forth in claim 1 or 7, wherein the following relationships are satisfied:

$$L1 < (2 \times Pmax + Gap)$$

$$L2 > Pmax$$

where L1 is a length from the looping route which comes out from and returns to the second branch means on the bypass path, by way of the second transfer means on the horizontal path, the fusing means, the first branch means and the bypass path, L2 is a length of the reversing conveying path which extends from the second branch means to a position in the vicinity of the sheet cassette, Pmax a maximum length of a recording medium, and Gap is intervals of recording mediums to be conveyed.

11. An electrophotographic apparatus as set forth in claim 1 or 10, wherein the second branch means incorporate a stepped part for guiding the leading end of a recording medium fed from the reversing conveying path onto the return conveying path.

12. An electrophotographic apparatus as set forth in claim 1 or 10, wherein the second branch means incorporates a branch assist member for guiding the leading end of a recording medium fed out from the reversing conveying path onto the return conveying path, which is lifted by the recording medium when the recording medium is fed from the bypass conveying path onto reversing conveying path, but naturally drops under gravity when the recording medium is fed from the reversing conveying path onto the return conveying path.

13. An electrophotographic apparatus as set forth in claim 11 or 12, wherein there is provided a recording medium detecting means for detecting the presence of a recording medium on the conveying path from the second branch means to the reversing conveying path so as to determine an operation timing of a recording medium driving mechanism associated with the reversing conveying path.